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- Horn-d'Arturo, G.** Le "ombre volanti." Roma. 1924. p. 131-181. illus. 24 $\frac{1}{2}$ cm. (Pubb. dell'Osserv. astron. R. Univ. di Bologna. v. 1, n. 6.) [Estr.: Mem. soc. astron. ital. n. s. v. 3.]
- Huntington, Ellsworth.** Civilization and climate. 3d ed., rev. and rewritten. New Haven. 1924. xix, 453 p. illus. diagrs. 23 $\frac{1}{2}$ cm.
- [Italy.] **R. Uff. cent. di met. e geof.** Riassunto annuale delle osservazioni meteorologiche eseguite negli osservatori italiani durante gli anni solari 1921 e 1922. Roma. 1924. 37 p. 26 $\frac{1}{2}$ cm.
- Kähler, K.** Die Elektrizität der Gewitter. Berlin. 1924. 148 p. illus. 23 cm. (Sammlung Borntraeger Bd. 3.)
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- Mauchly, S. J.** Atmospheric electricity. p. 37-40. illus. 24 cm. (Repr.: QST, Nov., 1924.)
- New York (state). Conservation commission. Annual report. 14th. 1924. Albany. 1925. 251 p. illus. front. plates (fold.) 23 cm. [Weather stations in connection with forest fires, p. 142, fig. Wing spread of gipsy moth, p. 168, figs.]
- Peek, F. W.** Lightning. p. 141-182. illus. 24 $\frac{1}{2}$ cm. (Repr.: Journ. Franklin inst. v. 199, no. 2, Feb., 1925.)
- Smyrna. Smyrna climatic chart. General monthly average of meteorological observations made daily during nine consecutive years. n. p. n. d. sheet. 21 $\frac{1}{2}$ cm.
- Vegard, L.** Auroral spectra at different altitudes and the origin of the green auroral line . . . Christiania. 1923. 6 p. illus. 27 cm. (Videnskapsselskapets skrifter. I. Mat.-naturv. klasse. 1923. No. 9.)
- Auroral spectrum and the upper strata of the atmosphere . . . Kristiania. 1923. 18 p. 27 $\frac{1}{2}$ cm. (Videnskapsselskapets skrifter. I. Mat.-naturv. klasse. 1923. No. 8.)
- Distribution of matter in the highest strata of atmosphere . . . Kristiania. 1923. 18 p. illus. 27 $\frac{1}{2}$ cm. (Videnskapsselskapets skrifter. I. Mat.-naturv. klasse. 1923. No. 10.)
- ### RECENT PAPERS BEARING ON METEOROLOGY
- The following titles have been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers and other communications bearing on meteorology and cognate branches of science. This is not a complete index of all the journals from which it has been compiled. It shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau.
- American journal of science. New Haven. (5) v. 9. March, 1925.*
- Coleman, A. P. Late paleozoic climates. p. 195-203.
- American meteorological society. Bulletin. Worcester, Mass. v. 6. 1925.*
- Alter, Dinsmore. Application of Schuster's periodogram to long rainfall records. p. 8-9. (Jan.) [Abstract of discussion only.]
- Anderson, J. B. Some meteorological encounters of the Shenandoah. p. 19-20. (Jan.) [Abstract.]
- Calvert, E. B. Fruit-spray and harvest-weather forecast work of the Weather Bureau in New York State. p. 15-16. (Jan.) [Abstract.]
- Cline, I. M. Distribution of rainfall in tropical cyclones. p. 10. (Jan.) [Abstract.]
- Gregg, W. R. Some outstanding aerological problems. p. 22-23. (Jan.) [Abstract.]
- Humphreys, W. J. The variation of the wind with height. p. 20-21. (Jan.) [Abstract.]
- Hunter, H. C. Tornadoes of the United States, 1916-1923. p. 10. (Jan.) [Abstract.]
- Jensen, J. C. Changes in the potential gradient during thunderstorms. p. 16. (Jan.) [Abstract.]
- Kincer, J. B. Climate and weather influence on the fruit industry of the United States. p. 12-14. (Jan.) [Abstract.]
- Meisinger memorial. p. 21-22. (Jan.)
- Talman, Charles Fitzhugh. The vocabulary of weather and climate. p. 10-11. (Jan.) [Abstract.]
- Thiessen, A. H. Weather forecasting for long airplane flights. p. 18-19. (Jan.) [Abstract.]
- Vaughan, Lloyd D. On the mechanism of fluid rotation in the atmosphere. p. 17-18. (Jan.) [Abstract.]
- Ward, R. De C. Teaching climate by lantern slides. p. 12. (Jan.) [Abstract.]
- Bjerknes, V. Simple weather maps by radio. p. 37. (Feb.) [Abstract.]
- Fergusson, S. P. The use of duralumin in the construction of apparatus. p. 36-37. (Feb.) [Abstract.]
- Humphreys, W. J. Ice ribbons. p. 38. (Feb.) [Abstract.]
- Patterson, J. The theory of the anemometer. p. 35-36. (Feb.) [Abstract.]
- Tripp, Frances V. Heliotherapy. p. 33-34. (Feb.)
- Tripp, Frances V. Solar climate. p. 30-33. (Feb.)
- Tripp, Frances V., & Brooks, Charles F. Solar radiation and the atmosphere. p. 25-30. (Feb.)
- Voorhees, J. F. A preliminary study of effective rainfall. p. 38. (Feb.) [Abstract.]
- Annalen der Hydrographie und maritimen Meteorologie. Berlin. 52. Jahrg. 1924.*
- Altberg, W. Die physikalischen Bedingungen der Eisbildung auf dem Grunde von Flüssen und Seen. p. 225-229. (H. 10.); p. 273-275. (H. 11.)
- Castens, Gerhard. Aus der Praxis des Hamburger Flughafen-Meteorologen. p. 241-244. (H. 10.)
- Iswekow, B. Das verallgemeinerte Margulessche Problem. p. 234-240. (H. 10.)
- Mey, A. Die Wetterwarte Königsberg i. Pr. p. 229-233. (H. 10.)
- Archives des sciences physiques et naturelles. Genève. v. 6. Novembre-Décembre 1924.*
- Piccard, Auguste. La foudre et le ballon libre. p. 405-406.
- Association of American geographers. *Annals. Albany. v. 14. December, 1924.*
- Davis, W. M. The progress of geography in the United States. p. 159-216. ["Climate and weather," p. 173-177.]
- Astronomical society of the Pacific. Publications. San Francisco. v. 36. February, 1925.*
- Humphreys, W. J. Note on the green ray. p. 20.
- Astronomie. Paris. 39. an. 1925.*
- Gazaud, L. Sur les zones de silence. p. 93-94. (Fév.)
- Besson, Louis. Sur les variations barométriques en Portugal. p. 124-129. (Mars.)
- Giao, Antoine. Sur la périodicité des minima barométriques dans le sud du Portugal. p. 121-124. (Mars.)
- British association for the advancement of science. Report of the 92d meeting. Toronto. 1924.*
- Bjerknes, V. The forces which lift aeroplanes. p. 367. [Abstract.]
- Bjerknes, J. The importance of atmospheric discontinuities for practical and theoretical weather forecasting. p. 364. [Abstract.]
- Coleman, A. P. Pre-Cambrian climates. p. 390-391. [Abstract.]
- Dawson, W. Bell. Effect of wind on the tide. p. 372. [Abstract.]
- Gregory, J. W. Inter-racial problems and white colonization in the tropics. p. 125-147. [Discusses effects of tropical climate, p. 136-142.]
- Humphreys, W. J. Rainmaking. p. 368. [Abstract.]
- Humphreys, W. J. The relation of wind to height. p. 364. [Abstract.]
- Kimball, H. H. The determination of daylight intensity from automatic records of total solar and sky radiation. p. 368. [Abstract.]
- Marvin, C. F. Let us simplify the calendar and publish statistical data in standardised summaries. p. 368-369. [Abstract.]

- British association for the advancement of science*—Continued.
- Owens, J. S. The automatic measurement of atmospheric pollution. p. 367-368. [Abstract.]
- Owens, J. S. Haze observations. p. 365. [Abstract.]
- Patterson, J. Upper-air observations in Canada. p. 368. [Abstract.]
- Richardson, L. F. Turbulence and temperature-gradient among trees. p. 364-365. [Abstract.]
- Shaw, Sir Napier. If the earth went dry. p. 362. [Abstract.]
- Stupart, Frederic. The variableness of Canadian winters. p. 362-363. [Abstract.]
- Thomson, A. Upper wind observations at Samoa, 1923-24. p. 372. [Abstract.]
- Whipple, F. J. W. The diurnal variation of pressure: facts and theories. p. 364. [Abstract.]
- California citograph*. Los Angeles. v. 10. April, 1925.
- Smith, Willard. Wind damage as related to quantity and quality production of oranges. p. 196; 206-207.
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- Jaumotte, J. Un cas de sursaturation extraordinaire dans l'atmosphère libre. p. 42-49. (See p. 79, this REVIEW.)
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- Tornado destruction in southern Illinois. p. 522.
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- Bureau, R. Les atmosphériques. Leur classification. Leurs propriétés thermodynamiques. p. 529-532. (16 fév.)
- Athanasiu, G. Sur la sensibilité des actinomètres à électrodes de mercure. p. 587-589. (23 fév.)
- Lugeon, Jean. Relations entre diverses discontinuités météorologiques et les oscillations hertziennes parasites au voisinage des chaînes de montagnes. p. 594-597. (23 fév.)
- Petitjean, L. Sur une discontinuité stationnaire en Méditerranée occidentale. p. 597-598. (23 fév.)
- Heating and ventilating magazine*. New York. v. 22. February, 1925.
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- Marine observer*. London. v. 2. March, 1925.
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- Crestani, G. Il pluviometro e il vento: ricerche sperimentali. p. 213-215. (Nov.-dic.)
- Eredia, Filippo. La misura della radiazione solare. p. 208-211. (Nov.-dic.)
- Eredia, Filippo. La riforma del calendario gregoriano. p. 211-212. (Nov.-dic.)
- Eredia, Filippo. Sul modo di indicare sinteticamente il clima di una località. p. 205-208. (Nov.-dic.)
- Rossi, Alberto. Condizioni climatiche ed atmosferiche dell'Istria. p. 215-218. (Nov.-dic.)
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- Glasspoole, J. The unprecedented rainfall at Cannington. p. 205-207.
- Ockenden, C. V. The penetrating radiations of the upper air. p. 220-221. [Results of investigations by Millikan.]
- Sutton, J. R. The control of fire-damp by atmospheric pressure. p. 211-212.
- Whipple, F. J. W. The circulation of atmospheric electricity; some new evidence. p. 201-204.
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- Nature. London*. v. 115. 1925—Continued.
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- Cave, C. J. P. The future of the Meteorological office. p. 378. (March 14.)
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- Mascart, Jean. Géographie et météorologie. p. 92-94. (7 fév.)
- Rabot, Charles. Le début de l'hiver 1924-1925 dans le nord scandinave. suppl. p. 41. (7 fév.) [Remarkably mild winter in northern Europe.]
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- König. Die Wetterlage bei der Amerikafahrt des Zeppelinluftschiffes. p. 110. (6. Feb.) [Abstract.]
- v. Ficker. Ballonfahrten bei Föhn. p. 110-111. (6. Feb.) [Abstract.]
- Kassner, [Carl.] [Der] Wolkenbruch am 21. Juni 1924 in Berlin. p. 223. (13. März.) [Abstract.]
- Wussow, [G.] Die Häufigkeit der Niederschlagstage in Deutschland nach Stufenwerten der Niederschlagsmenge und ... die Darstellung der Niederschlagsverteilung in Deutschland durch Isanomalien. p. 222-223. (13. März.) [Abstract.]
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- Bongards, H. Messungen des Gehalts der Luft an radioaktiven Zerfalls-producten vom Flugzeug aus. p. 679-682. (No. 24.) [Abstract.]
- Vegard, L. Das Nordlichtspektrum und die Höheren Atmosphärenschichten. p. 685-689. (No. 24.) [Abstract.]
- Wigand, A. Luftelektrische Untersuchungen bei Flugzeug-aufsteegen. p. 684-685. (No. 24.) [Abstract.]
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SOLAR OBSERVATIONS

**SOLAR AND SKY RADIATION MEASUREMENTS DURING
FEBRUARY, 1925**

By HERBERT H. KIMBALL, In Charge, Solar Radiation Investigations

For a description of instruments and exposures, and an account of the method of obtaining and reducing the measurements, the reader is referred to the REVIEW for January, 1924, 52: 42 and January, 1925, 53: 29.

From Table 1 it is seen that solar radiation intensities averaged considerably below normal values for February at all three stations.

Table 2 shows that the total solar and sky radiation received on a horizontal surface averaged below normal at the three stations for which weekly normal values have been determined. The deficiency was especially marked at Madison, Wis.

At Washington, skylight polarization measurements made on five days give a mean of 51 per cent, with a maximum of 58 per cent on the 27th. These values are also below the corresponding averages for February at Washington.

No polarization measurements were obtained at Madison, as the ground was continuously covered with snow.

The data from all the stations unites in showing unusually low atmospheric transmission of solar radiation. This may have been due in part to low wind velocities, which permitted an unusual accumulation of smoke of local origin to collect over the cities in or near which the various observing stations are located. The high average temperature, and the accompanying high water-vapor content of the atmosphere no doubt also contributed to the diminution of atmospheric transmission.

TABLE 1.—Solar radiation intensities during February, 1925
 [Gram-calories per minute per square centimeter of normal surface].

Rate per square centimetre

Date	8 a.m. 75th mer. time	Sun's zenith distance									Noon Local mean solar time
		78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	
		Air mass									
A. M.	P. M.										
		e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0
Feb. 3	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm
	1.62						1.22	0.89	0.98		1.88
	2.26						0.89				2.62
	2.87	0.49	0.60	0.78	1.04		1.08	0.91	0.74		3.63
	3.47	0.58	0.69	0.79	1.03		0.65	0.59			4.71
	2.26	0.48	0.68	0.95	1.20	1.54	1.21	0.97	0.82	0.69	2.26
	8.63		0.54	0.73							3.41
	3.99	0.68	0.81	0.93	1.18		1.18	0.95			2.74
	3.99				1.16			1.81			1.24
	1.12				0.91	1.16		1.24	1.06	0.90	0.77
Means		1.32	0.47	0.62	0.85	1.11	1.37				1.60
Departures			0.54	0.66	0.89	1.10		1.10	0.91	0.82	0.73
		-0.17	-0.15	-0.08	-0.06		-0.08	-0.06	-0.02	-0.03	

TABLE 1.—*Solar radiation intensities during February, 1925*—Con.
Madison, Wis.

Date	8 a.m.	Sun's zenith distance									Noon
		78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	
	75th mer. time	Air mass									Local mean solar time
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.
Feb. 5.....	m.m.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	m.m.
6.....	4.57	0.91	1.03	1.20	1.35	1.52	1.34	-----	-----	-----	4.95
13.....	4.17	-----	-----	-----	1.14	-----	1.10	-----	-----	-----	5.38
14.....	1.68	-----	-----	-----	1.39	-----	1.41	1.23	-----	-----	1.88
17.....	1.88	-----	1.02	1.15	1.30	1.47	-----	-----	-----	-----	2.49
27.....	0.91	-----	-----	-----	-----	-----	1.26	-----	-----	-----	1.60
Means.....	0.51	(0.91)	1.07	1.21	1.33	-----	1.28	(1.23)	-----	-----	1.60
Departures.....	-	-0.03	-0.05	-0.02	-0.04	-----	-0.08	+0.05	-----	-----	-----

Lincoln, Nebr.

TABLE 2.—*Solar and sky radiation received on a horizontal surface*
 (Gross solarins per square centimeter of horizontal surface)

Week beginning—	Average daily radiation					Average daily departure from normal		
	Washington	Madison	Lincoln	Chicago	New York	Washington	Madison	Lincoln
Jan. 29.....	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
	200	167	268	104	140	+2	-33	+21
Feb. 5.....	194	160	227	86	128	-22	-57	-40
12.....	184	227	312	135	149	-50	-12	+18
19.....	225	135	255	66	183	-33	-124	-64
Excess or deficiency since first of year on Jan. 25.....						-1,134	-1,834	-700